

REMARKS

Status of Claims

Claims 1-46 and 48-50 are pending in this application, the independent claims being claims 1, 9, 24, 32 and 50. By this Amendment, claim 47 is canceled, claims 21-23 and 44-46 are amended, and claims 48-50 are newly presented.

Summary of Official Action

In the Official Action, claims 21, 23, 45 and 46 were rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claim 47 was rejected under 35 U.S.C. §102(b), as anticipated by either Japanese Patent Document No. 3209883 (Naoki) or Japanese Patent Document No. 8-297430 (Masahiro). Claims 9-11, 13-17, 19, 20, 22, 23, 32-34, 36, 37, 39, 40, 42, 43 and 45-47 were rejected under 35 U.S.C. §102(b), as anticipated by Japanese Patent Document No. 9-114317 (Yasuhiro).

Reconsideration and withdrawal of the rejections respectfully are requested in view of the above amendments and the following remarks.

Allowed Claims

Initially, Applicant gratefully acknowledges the Examiner's indication that the Application contains allowable subject matter, that claims 1-8 and 24-31 are allowed, and that claims 12, 18, 35, 38, 41 and 44 are allowable over the prior art.

Claim Amendments

The formal rejection of claims 21, 23, 45 and 46 respectfully is traversed. Nevertheless, without conceding the propriety of the rejection, newly presented claims 48 and 49 have been added, and claims 21, 22, 23, 44, 45 and 46 have been amended to depend therefrom, to provide explicit antecedent basis for the terms objected to by the Examiner and to recite more clearly various novel features of the claimed invention, with particular attention to the Examiner's comments. Support for the proposed amendments may be found in the

original application. No new matter has been added. Also in this regard, Applicant notes that claim 9 provides antecedent basis for the term "a fixation medium."

The rejections of claim 47 over the cited art respectfully are traversed. Nevertheless, without conceding the propriety of the rejections, claim 47 has been canceled without prejudice to or disclaimer of the subject matter recited therein. Applicant reserves all rights to the subject matter recited therein, including the right to file a continuation application directed to the subject matter recited therein.

Newly presented independent claim 50 has been added to provide Applicant with an additional scope of protection commensurate with the disclosure. No new matter has been added.

Claimed Invention

The present invention relates to a novel thermal fixing device and image forming apparatus. In one aspect, as recited in independent claim 9, the claimed invention relates to a thermal fixing device comprising a fixing member disposed to be in contact with a fixation medium, a heating unit configured to heat the fixing member with power supplied thereto, and a thermal cutoff unit having a bimetal that is deformed by heat and exposed toward the fixing member to be in contact therewith without intermediary of air, and configured to cut off the power supplied to the heating unit by deformation of the bimetal.

In a similar aspect, as recited in independent claim 32, the claimed invention relates to an image forming apparatus comprising a sheet feeding section configured to feed a sheet, and an image forming section configured to form an image on the sheet fed by the sheet feeding section. The image forming section includes a thermal fixing device comprising a fixing member disposed to be in contact with the sheet, a heating unit configured to heat the fixing member with power supplied thereto, and a thermal cutoff unit having a bimetal that is deformed by heat and exposed toward the fixing member to be in contact therewith without

intermediary of air, and configured to cut off the power supplied to the heating unit by deformation of the bimetal.

In each of these aspects, the claimed invention relates to a bimetal that is exposed toward a fixing member to be contacted therewith without intermediary of air.

In another aspect, as recited in newly presented independent claim 50, the claimed invention relates to a thermal fixing device comprising a fixing member disposed to be in contact with a fixation medium, a heating unit which generates heat by electrical power supplied thereto, the fixing member being heated by the heat generated by the heating member, a supporting member that supports the fixing member, the supporting member being softened when the fixing member is overheated by the heating unit, a switch capable of being actuated such that the electrical power supplied to the heating unit is cut off, and a bimetal disposed to face the fixing member. The fixing member moves toward the bimetal when the supporting member is softened, the bimetal is deformed by movement of the fixing member, and the switch is actuated by the deformation of the bimetal. In this manner, the bimetal is deformed by heat when the fixing member is overheated, and the switch is actuated by deformation of the bimetal.

Prior Art Distinguished

The rejection of the claims over the cited art respectfully is traversed.

Applicant submits that the prior art fails to anticipate the claimed invention.

Moreover, Applicant submits that there are differences between the subject matter sought to be patented and the prior art, such that the subject matter taken as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made.

The Yasuhiro JP '317 reference relates to a thermostat, and illustrates in Drawing 4 and describes in the corresponding written disclosure a fixing device for an electrophotography-type image formation equipment, such as a copy machine. However,

Applicant submits that the Yasuhiro JP '317 reference fails to disclose or suggest at least the above-described features of the claimed invention. Rather, the Yasuhiro JP '317 reference discloses a thermostat structure including a heat receiving part 4a (114a) arranged to come into contact with or come close to the object being temperature controlled, and a bimetal 3 (113) arranged to be opposed to the heat receiving part 4(a), with a gap formed therebetween; the gap between the heat receiving part 4(a) and bimetal 3 is filled with high heat conductive substance 5, such as silicone grease, to facilitate heat conduction across the gap to the bimetal. (See Figs. 1(a), 1(b), 2(a) and 2(b)). Nowhere is the Yasuhiro JP '317 reference understood to disclose or suggest the feature of a bimetal that is exposed toward a fixing member to be contacted therewith without intermediary of air, as disclosed in the present application and recited in the claims.

For the above reasons, Applicant believes claims 9 and 32 are allowable over the cited art.

Claims 10-23 and 48, and 33-46 and 49 depend from claims 9 and 32, respectively, and are believed allowable for the same reasons. Moreover, each of these dependent claims recites additional features in combination with the features of its respective base claim, and is believed allowable in its own right. Individual consideration of the dependent claims respectfully is requested.

Conclusion

Applicant believes that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action, and submits that the application is in condition for allowance. Favorable consideration of the claims and passage to issue of the application at the Examiner's earliest convenience earnestly are solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below:

Respectfully submitted,

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Attachment:
Amendment Transmittal

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